Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. – 25. (Canceled)

26. (Previously Presented) A method for estimating a magnetic field source comprising the steps of:

(1) measuring a magnetic field component (Bz(x,y,t)) in a z axis direction of a biomagnetic field generated from a living body by using a plurality of fluxmeters disposed externally of said living body, each fluxmeter including a superconducting quantum interference device (SQUID), wherein a plane parallel to the surface of said living body corresponds to the xy plane of a Cartesian coordinate system and a direction perpendicular to the surface of said living body corresponds to z axis of the Cartesian coordinate system;

(2) determining a value proportional to a root of $S(x,y,t) = \{\{\partial Bz(x,y,t)/\partial x\}^2 + \{\partial Bz(x,y,t)/\partial y\}^2\}$ from said magnetic field component (Bz(x,y,t)) in the z axis direction, and determining an isomagnetic field map obtained by connecting points at which said values proportional to said root are equal to each other;

(3) displaying said isomagnetic field map; and

(4) solving an inverse problem for estimating a position and a magnitude of a magnetic field source within said living body, using the number of peaks and position data of said peaks in said isomagnetic field map as initial values

for solving said inverse problem, and wherein a current dipole is assumed as said magnetic field source, wherein said position data and said number of peaks are designated on said isomagnetic field map as said initial values for solving said inverse problem.

27. (Currently Amended) A method for estimating a magnetic field source comprising the steps of:

(1) measuring a magnetic field component (Bz(x,y,t)) in a z axis direction of a biomagnetic field generated from a living body by using a plurality of fluxmeters disposed externally of said living body, each fluxmeter including a superconducting quantum interference device (SQUID), wherein a plane parallel to the surface of said living body corresponds to the xy plane of a Cartesian coordinate system and a direction perpendicular to the surface of said living body corresponds to the z axis of the Cartesian coordinate system;

(2) determining a value proportional to a root of $S(x,y,t) = \{\{\partial Bz(x,y,t)/\partial x\}^2 + \{\partial Bz(x,y,t)/\partial y\}^2\}$ from said magnetic field component (Bz(x,y,t)) in the z axis direction, and determining an isomagnetic field map obtained by connecting points at which said values proportional to said root are equal to each other;

(3) displaying said isomagnetic field map; and

(4) solving an inverse problem for estimating a position and a magnitude of a magnetic field source within said living body, using the number of peaks and position data of said peaks in said isomagnetic field map as initial values for solving said inverse problem,

wherein the step (4) includes calculation of magnetic fields at a plurality of positions (x,y) where said biomagnetic fields are detected, on the assumption that a current dipole being assumed as said magnetic field source generates a magnetic field indicated by the ~~Bio-Savart~~ Biot-Savart formula at said plurality of positions (x,y), calculation of an evaluation function expressed by the difference between said plurality of calculated magnetic fields and said detected biomagnetic fields at said plurality of positions (x,y), and determination analytically of the minimum value of the evaluation function by changing positional coordinates of said current dipole to solve said inverse problem, and said position data and said number of peaks are designated on said isomagnetic field map as said initial values for solving said inverse problem.